

AMENDMENTS TO THE DRAWINGS:

Replace the sheets of drawings containing Figures 1-5 with the accompanying replacement sheets containing the same figures.

In the replacement sheets, the figures have been individually labeled, pursuant to the Examiner's request.

REMARKS

In response to the Office Action dated June 28, 2005, Applicants respectfully request reconsideration and withdrawal of the objections to the disclosure and rejection of the claims.

The Abstract was objected to as containing more than one hundred and fifty words. In response thereto, an amended Abstract with a reduced number of words is being submitted herewith.

The Examiner requested that Figures 1a, 1b, 1c, etc. be separately labeled. In response thereto, replacement sheets of drawings, which comply with this request, are being submitted.

The drawings were objected to under 37 C.F.R. §1.83(a). The objection requires the drawings to illustrate the claimed "concentrated zones" and "polymer matrix". It is respectfully submitted that these claimed features are depicted in the original drawings. For example, with reference to Figures 1a-1c, the concentrated zones are represented by the dark areas in the figures, and the polymer matrix is depicted by the white areas. It is respectfully submitted that a person of ordinary skill in the art would understand these representations upon reading the disclosure, for example page 6, lines 30-33.

Accordingly, it is submitted that no changes to the drawings are necessary to comply with the requirements of 37 C.F.R. §1.83(a). If the Examiner believes that it would be helpful to amend the specification to explicitly point out that the dark areas in the figures represent the concentrated zones, and the white areas represent the polymer matrix, Applicants will submit an amendment to this effect upon receipt of an indication to do so.

Claims 1-13 were rejected under 35 U.S.C. §102, on the grounds that they were considered to be anticipated by the *Li et al.* patent (U.S. 6,437,558). With reference to Figures 1a-1c of the patent, the Office Action contends that it discloses at least one set of alternative piezoelectric layer and magnetostrictive composite layer. It is respectfully submitted that the disclosure of the patent does not support this contention.

More particularly, the *Li et al.* patent does not contain any disclosure of a "magnetostrictive composite layer" as recited in claim 1. Rather, the patent discloses "magnetostrictive materials", namely magnetostrictive ceramic materials and magnetostrictive metallic materials. There is no disclosure of a *composite* material. The commonly understood definition of the term "composite" is a multiphase material that is artificially made to combine two or more physically distinct and mechanically separable materials. The magnetostrictive ceramic materials and magnetostrictive metallic materials described in the *Li et al.* patent do not meet this definition. Each of them only comprises a single phase material, and therefore they are not magnetostrictive *composites*.

The Office Action refers to the *Li et al.* patent at column 5, lines 25-26 as allegedly disclosing a magnetostrictive composite layer. However, this portion of the patent describes various criteria for selecting suitable piezoelectric materials to be used in the piezoelectric layer. It does not teach the dispersion of a magnetostrictive material in a polymer matrix to form a magnetostrictive composite layer.

Furthermore, claim 1 recites that the magnetostrictive composite layer "includes at least one magnetostrictive material disposed in first concentrated zones within a first polymer matrix, wherein all of said concentrated zones are oriented

along a first direction." Even if one were to assume that the sandwiched structures of Figures 1a-1c of the *Li et al.* patent depict magnetostrictive composite layers, there is no showing that these layers meet the recitations of claim 1. Specifically, there is no showing that an individual magnetostrictive layer comprises a magnetostrictive material disposed in first concentrated zones within a first polymer matrix, wherein all of the concentrated zones are oriented along a first direction. The Office Action does not identify anything that could be considered to be a concentrated zone, nor the orientation of such a zone.

Furthermore, claims 10-13 recite a magnetoelectric device that includes a magnetoelectric element according to claim 1, for example, *and* at least one field generator for generating a magnetic field in which the magnetoelectric element is positioned. The Office Action contends that the *Li et al.* patent discloses the subject matter of these claims, but fails to identify any support in the patent for this contention. For this additional reason, therefore, it is respectfully submitted that the Office Action has not identified a proper basis for rejecting claims 10-13.

In view of the foregoing, it is respectfully submitted that claims 1-13 are patentable over the teachings of the *Li et al.* patent. Reconsideration and withdrawal of the rejection is respectfully requested.

Respectfully submitted,

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